Anesthetic Protocol for Live Donor Hepatectomy

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This procedure involves the removal of the right lobe of the liver (potentially left lobe or left lateral segment) from a healthy donor for immediate transplantation. It is crucial to insure a safe, successful procedure with as little inconvenience, pain and morbidity to the donor as possible. Because it is essential to remove the piece of liver with intact blood vessels , no warm ischemic time and minimal trauma to insure immediate graft function in the recipient, the procedure may take longer than the "average liver resection". There will be 1 of the transplant anesthesia attendings with each case, 1 on 1. Senior residents (CA2 or CA3) should be placed in both rooms.

Preoperative Evaluation

The standard preoperative evaluation must be done. One should be certain no co-morbid conditions exist that may complicate the successful completion of this procedure, with special attention paid to the cardiovascular and pulmonary systems. In addition, complete psychological examination is mandatory as is full informed consent.

Anesthetic Set-Up

1. ASA standard monitors.
2. Standard "rescue drugs" and medications.
3. 2 fluid warmers.
4. 2 Bair-Huggers (upper and lower).
5. Warming blanket.
6. Plasma-lyte as the IV fluid of choice prepared with blood tubing.
7. 2 transducers – CVP and A-line.
8. Arrow introducer (9 french) and "SLIC" catheter.
9. Radial A-line.
10. Blood storage bags for isovolumic hemodilution (at least 2).
11. Cell saver.
12. 4 units PRBC's and 4 units FFP available for all cases.

Anesthetic Management

1. If plausible…Reglan 10 mg PO and Ranitidine 150 mg PO to be given before bedtime the night before and prior to leaving for the hospital the morning of surgery (with a small sip of water).
2. 16 gauge or larger peripheral IV placed pre-induction.
3. Versed, 2 mg IV to be given in holding area
4. Induction as normal, usually propofol, fentanyl and vecuronium.
5. Arrow introducer with "SLIC" catheter placed in central vein unless left lateral segment only is to be removed (such as an adult donor to a child recipient).
6. Radial A-line .

7. Nasogastric tube and esophageal temperature probe.
8. Ancef, 1 gram IV, (Vancomycin, 1 gram IV if Penicillin allergic).
9. Upper and lower body bair-huggers to be placed.
10. Maintenance to be accomplished with oxygen/air/volatile agent/Narcotic…NO N_20!!
11. Ventilation with 5-7 ml/kg tidal volume with respiratory rate adjusted as necessary to maintain PaCO2 35-40 mm Hg, with PEEP 5 added.
12. Isovolumic hemodilution to be accomplished down to a hematocrit of 25%-30%, depending on age…blood to be given back at the end of surgery, once all bleeding is controlled.
13. Cell saver to be used during surgery with blood given back as received.
14. Labs (gemstat) to be done at least q 2 hours with treatment as necessary.
15. Urine output to be maintained at $\geq$ ½ ml/kg/hr.
16. MAP to be maintained $\geq$ 70 mm Hg at all times.
17. CVP to be maintained between 0-5 mm Hg.
18. Patient to be placed in trendelenburg position as the liver is being cut across.
19. Heparin, 5000 units IV is given just prior to cross-clamping the blood vessels, with Protamine 50 mg IV given once vessels are cut.
20. Once the liver is out and all is stable, blood is to be given back, and the patients prepared for emergence with extubation.
21. Zofran, 4 mg IV for anti-emetic.
22. Immediate extubation (if appropriate) upon completion of closure.